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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,562	07/07/2000	Masahiro Kobayashi	JCLA6244	8123
23900	7590	06/02/2005	EXAMINER	
J C PATENTS, INC. 4 VENTURE, SUITE 250 IRVINE, CA 92618			DUONG, THO V	
			ART UNIT	PAPER NUMBER

3743

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/611,562

Applicant(s)

KOBAYASHI ET AL.

Examiner

Tho v. Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Receipt of applicant's amendment filed 3/11/2005 is acknowledged. Claims 6-11 are pending.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the claimed subject matter of "N=the number of slits per heat transfer fin unit" is not supported in the original disclosure.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter of "N=the number of slits per heat transfer fin unit" is not described in the original disclosure.

Response to Arguments

Applicant's arguments filed 3/11/2005 have been fully considered but they are not persuasive. Applicant's argument that Kang discloses (col. 5, lines 2-3) for N-10 has been very carefully considered but is not deemed to be persuasive. It appears that the applicant has counted

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the number of slits per slit array because Kang discloses in col. 5, lines 2-3 the number of slits (strips) for each slit array. Obviously, N is not defined to be the number of slits/slit array as claimed.

Applicant's argument that the actual size of figure 10A of the reference as a whole does not disclose the features recited in claims 6,8 and 10 have been very carefully considered but is not deemed to be persuasive. As stated in the Office Action mailed 12/29/2004, applicant does not rely on actual dimension of the figure but only the geometrical relationship between the diameter of the tube D_i , W_s , W_f and W from the same view of figure 10A. Applicant is advised to see the rejection for the anticipation of claims 6,8 and 10 by Kang.

Regarding applicant's argument on the combination of Park and Kang, this argument is not persuasive because reference to Kang is not relied on to show the actual size but only to show the geometrical relationship between the slits, spacing of slits, fin and tubes. Whether the actual size of Kang is modified or not, the geometrical relationship of Kang is maintained as the same. For example, the width of slit and the spacing between the slits are designed to be equal or the same size. Then, if the actual size of width of slit was changed from 1 mm to 2 mm, the spacing between the slits would also be changed from 1 mm to 2 mm. Regarding the motivation, Park teaches (figure 1, column 3, lines 1-2 and column 4, line 66-column 5, line 4) a heat exchanger has a tube size of 7 mm for the purpose of adapting the tube to be used in an air conditioner.

Claims 6-7 are further rejected as can be best understood by the examiner in which N equals to the number of slit arrays.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6, 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kang et al. (US 5,755,281). Kang discloses (figures 9 and 10) a heat exchanger comprising a heat transfer coil (30) penetrating through a row of multiple plate-shape heat transfer fins (20); air (A) is supplied orthogonally to the heat transfer coil; the heat transfer fin is partitioned in at least one fin unit in which arrays of slits are arranged in a row. As regarding claim 1, the formula:

$W_s \geq (1 - 0.1(6-N))W_f/(2N+1)$, can be rearranged as

$W_s/W_f \geq (1 - 0.1(6-N))/(2N+1)$

Kang discloses (figure 9) a partial view of a fin unit, which includes 12 slit arrays (including two slit arrays on the far edges of the figure). The number of slit arrays is clearly greater than 12 if the whole fin unit is shown. Therefore, N is greater than 12, for the purpose of calculation, N is equal to 12. After plugging the N value, the formula is further simplified as a ratio of

$W_s/W_f \geq 0.064$ (this number is smaller as the N value increases).

Basing on the geometrical relationship of figure 10A, the ratio between the width of the slit to the width of the fin is W_s/W_f is greater than 0.064. Therefore, the formula is anticipated by Kang. Also basing on the geometrical relationship of figure 10A, the ratio between the width of the slit (W_s) and spacing (W) between two slits to the diameter of the tube (30) are the same,

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which is approximately 0.23. This ratio is within the claimed range 0.17-0.29 and 0.18-0.5 of the invention. With regarding applicant's argument that it is improper to use proportion of the elements in the drawing, has been very carefully considered but is not deemed to be persuasive. It has been stated in rule 37 CFR 1.84. (k) (3) of the MPEP that "Elements of the same view must be in proportion to each other, unless a difference in proportion is indispensable for the clarity of the view". Applicant is also advised to see case laws in re Mraz 173 USPQ and Vas-Cath Inc. V. Mahurkar 19 USPQ 2d for geometrical relationship. The examiner does not rely on actual dimension of the figure but only the geometrical relationship between the diameter of the tube D_i , W_s , W_f and W from the same view of figure 10A. The geometrical relationship of Figure 10A is shown in the Appendix B1, B2 and B3 (in the office action sent 12/29/2004). In the appendix B1, B2 and B3, the present of a ruler is not to show the actual size of the drawings but only to help the applicant to visualize the geometrical relationship between the slit, spacing between slits, fin and tube because regardless of what scale, the ratio number is dimensionless. From appendix B1, W_f appears to have 34 intervals, from appendix B2, D_i appears to have 9.5 intervals, from appendix B3, $W_s = W$ and appears to have 2.2 intervals. The examiner uses the term "intervals" to emphasis the insignificant of scaling because the "interval" is canceled out when the ratio between two numbers is taken.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang in view of Park et al. (US 5,975,199). Kang discloses substantially all of the claimed invention as discussed above except for the limitation that the tube has a diameter of about 7 mm. Park discloses (figure 1, column 3, lines 1-2, and column 4, line 66- column 5, line 4) a heat exchanger that has a coil (2) with a diameter of 7mm been used in industrial application for the purpose of adapting the tube to be used in an air conditioner. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Parker's teaching in Kang's heat exchanger for the purpose of adapting the tube to be use in an air conditioner. Regarding applicant's argument in the Remark, applicant argues that Park does not provide the motivation to modify the actual size in Kang if the drawing of Kang is considered as the actual size. This argument is not persuasive because reference to Kang is not relied on to show the actual size but only to show the geometrical relationship between the slits, spacing of slits, fin and tubes. Whether the actual size of Kang is modified or not, the geometrical relationship of Kang is maintained as the same. For example, if the width of slit and the spacing between the slits are designed to be the same, if the actual size of width of slit is changed from 1 mm to 2 mm, the spacing between the slits will also be changed from 1 mm to 2 mm.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

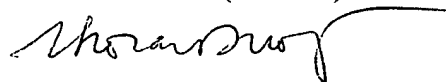
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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho v Duong
Primary Examiner
Art Unit 3743



TD
May 27, 2005